HENRY (YUHAO) ZHOU

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EDUCATION

University of Toronto, Canada — September 2014 - June 2019
Bachelor of Applied Science — Cumulative GPA: 3.92/4.00
Specialist in Computer Engineering — Rank: Top 2%
Minor in Robotics and Mechatronics
Advisor: Prof. Sanja Fidler and Prof. Jimmy Ba

INDUSTRY EXPERIENCE

Ello Technology, Inc. — March 2023 - Present
Lead Scientist, Speech — *San Francisco, CA*

· Lead the development of the child speech recognition system at Ello
· Responsible for the curation of the data, the development of the model, the integration with the product.

Talka AI — May 2021 - February 2023
Co-founder and AI Architect — *Toronto, Canada*

· Co-founded Talka; directly report to CTO for product developments.
· Responsible for the machine learning pipeline and the backend integration of the product.
· Responsible for the management of the team and recruitment for new hires.

Facebook, AI Research — August 2019 - August 2020
Facebook AI Resident — *Menlo Park, CA*

· One year program working with research scientists and engineers on AI research.
· Worked on Speech and Natural Language project with Dr. Michael Auli and Alexei Baevski.

Nvidia — January 2019 - July 2019
Deep Learning Intern — *Toronto, Canada*

· Worked on computer vision project supervised by Prof. Sanja Fidler and Prof. Antonio Torralba.
· Proposed and designed neural network architectures and customized game logic in Pacman.

PUBLICATION

See my full publication record and citations at Google Scholar 6600+ citations as of 2025-02.

· T. Wu, **Y. Zhou**, W. Ling, H. Yang, J. Veloso, L. Sun, R. Huang, N. Guimaraes, S. Sanner *Towards Dialogue Modeling Beyond Text* (*International Conference on Acoustics, Speech and Signal Processing'23*)
· **H. Zhou**, A. Baevski, M. Auli *A Comparison of Discrete Latent Variable Models for Speech Representation Learning* (*International Conference on Acoustics, Speech and Signal Processing'21*)
· A. Baevski, **H. Zhou**, A. Mohamed, M. Auli *wav2vec 2.0: A framework for self-supervised learning of speech representations* (*Neural Information Processing Systems'20*)
· S. W. Kim, **Y. Zhou**, J. Philion, A. Torralba, S. Fidler. *Learning to Simulate Dynamic Environments with GameGAN* (*Computer Vision and Pattern Recognition'20*)
· **Y. Zhou***, T. Wang*, S. Fidler, J. Ba. *Neural Graph Evolution: Automatic Robot Design* (* denotes equal contribution. *International Conference on Learning Representations'19*)
· **Y. Zhou**, M. Tapaswi, S. Fidler. *Now You Shake Me: Towards Automatic 4D Cinema* (**Spotlight** in *Computer Vision and Pattern Recognition'18*)

SKILLS

Programming	Python, MATLAB, C/C++, JavaScript, Java, SQL, Verilog
Machine Learning	PyTorch, Tensorflow, Flask, Numpy, OpenCV, SKLearn; GCP, AWS
Infrastructure	Docker, Kubernetes, AWS, GCP
Markup	HTML/CSS, LaTeX, Markdown

RESEARCH EXPERIENCE

University of Toronto, Vector Institute January 2018 - June 2019
Research Assistant *Advisor: Prof.* ***Sanja Fidler****, Prof.* ***Jimmy Ba***

· Project on robotic structure design using genetic algorithms.
· Proposed using graphs to model RL agent and designed methods to modify graphs for efficient search.
· Designed methods to visualize the evolutionary progress and the genealogy tree in the genetic algorithm.
· Project on using Graph Network for learning dynamics in model-based reinforcement learning.
· Improved graph network for efficiently learning dynamics and discriminating graph isomorphism.
· Open-sourced a customized graph neural network library implemented in PyTorch and Tensorflow.

University of Toronto May 2018 - June 2019
Capstone Research *Advisor: Prof.* ***Stark Draper***

· Project on power-efficient hand gesture classifier for artificial prostheses control.
· Designed and implemented distributed machine learning optimization method using AWS Lambda service.
· Designed gesture classifier on electromyography (EMG) data for real-time processing.
· Benchmarked the performance of deep learning and signal processing methods for gesture recognition.
· Leading the senior-year capstone design team for project management, documentation, and experiments.

University of Toronto January 2017 - November 2017
Research Assistant *Advisor: Prof.* ***Sanja Fidler***

· Project on analyzing physical interaction in movies for automatic annotation of 4D effects in movies.
· Led the project in semantic classification and detection of physical interactions, such as splash, in movies.
· Proposed and designed multi-modal neural networks for processing visual and acoustic features. Performed ablation studies on the usefulness of each modality, and optimized the performance of the joint network.
· Created a crowd-sourcing website and trained human annotators to get high-quality annotations.
· Researched and trained deep neural networks on various audio and video datasets such as SoundNet.

ACADEMIC SERVICE

Reviewer	International Conference on Learning Representations (ICLR)
	Neural Information Processing Systems (NeurIPS)
	International Conference on Acoustics, Speech and Signal Processing (ICASSP)

AWARDS

Research	John Senders Award (Awarded to 1 Final Design among Engineering Department)
	Edith Grace Buchan Scholarship (Summer Research 2018)
	University Conference Travel Grant (CVPR18, NeurIPS18, ICLR19)
Academic	University of Toronto Graduate with High Honour (2019 Graduates)
	Dean's List (2015 - 2019) (Awarded to high academic performing students)
Competition	Best First Year Team in UTEK Software Design competition (2015)

TALKS AND PRESENTATIONS

Talk
Google Brain - Talk on *A Topology Space Odyssey*
Vector Robotics Summer School - Talk on *Self-adaptive Robots and Evolution*
Vector Institute AWS Usage showcase meeting on Neural Graph Evolution

EXTRA-CURRICULAR

Coursera
Served as the (Chinese) subtitle reviewer & performed final reviews for Calculus I (2015)
Served as the community mentor for Machine Learning (2016)
Served as the (Chinese) subtitle translater for the course Cryptography I (2016)

Volunteer
IEEE Student Branch at University of Toronto Webmaster (2015 - 2016)
IEEE Student Branch at University of Toronto Computer Chapter (2016)
University of Toronto ECE Department mentor (2016 - 2017)
University of Toronto Orientation Week Organizing Team (2015)

Sports
ECE Thunder Basketball Team (2015, 2016 Engineering League Champion)
University of Toronto SKULE Badminton Club (2014 - 2015)